

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 61135434
PUBLICATION DATE : 23-06-86

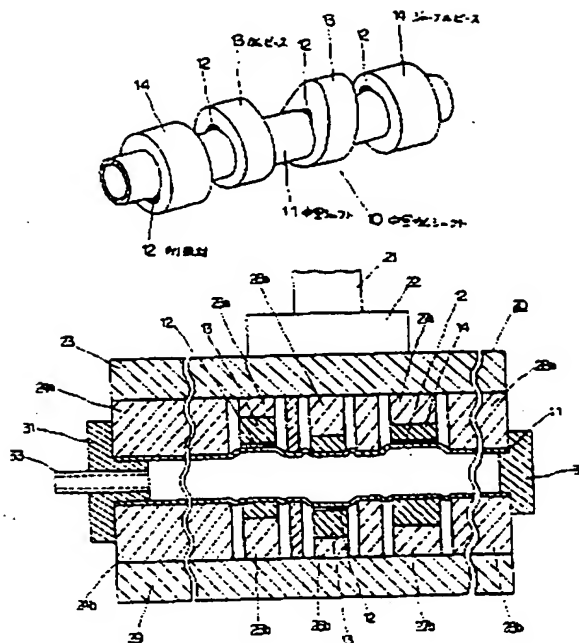
APPLICATION DATE : 05-12-84
APPLICATION NUMBER : 59255737

APPLICANT : NISSAN MOTOR CO LTD;

INVENTOR : FUJIKI AKIRA;

INT.CL. : B21D 26/02 F01L 1/04 F16H 53/02

TITLE : PRODUCTION OF CAM SHAFT



ABSTRACT : **PURPOSE:** To manufacture a secure cam shaft which runs with decreased bouncing noise even at any number of revolution by subjecting the fitting parts of a hollow shaft to which cam pieces are fitted at a prescribed angle in prescribed positions via vibration control materials to pipe expanding and bulging under the internal pressure thereby fixing said parts.

CONSTITUTION: The cam pieces 13, 14 having recesses to be interposed with the vibration control materials 12 in part of the inside hole are fitted at the prescribed angle in the prescribed positions of the hollow shaft 11. The shaft is then grasped and held by means of upper and lower segmental dies 24, 25, 26, 27 of a bulging device 20. Both ends of the shaft 11 are closed by closing plugs 31, 32 and the hollow part is pressurized 33 by pressure fluid to expand the materials 12 in the recesses so that said materials are fixed by the bulging. The cam shaft which is fixed with the cam pieces to the hollow shaft in and at the prescribed positions by means of the recesses and the materials 12 runs with decreased bouncing noise. The journal pieces may be fitted with the above-mentioned process.

COPYRIGHT: (C)1986,JPO&Japio